

CONTAINER FOR STORING A CRYOSURGERY DEVICE

RELATED APPLICATION

[0001] This application claims priority to 61/013,781 and is generally related to U.S. application Ser. No. 11/222,353, entitled "Cryosurgery Device," filed Sep. 8, 2005.

FIELD OF THE INVENTION

[0002] Some example embodiments of present invention include a container configured to store a cryosurgery device and a cryosurgery kit.

BACKGROUND

[0003] Cryosurgery devices are used for removing skin lesions such as warts. These devices have traditionally utilized liquid nitrogen as a medium for cooling down the tissue of a skin lesion to a temperature necessary to destroy the tissue. However, since liquid nitrogen has a boiling point of -196°C . and is therefore difficult to handle and administer safely, cryosurgery devices employing a pressurized liquid refrigerant having a higher boiling point, e.g. -20°C . to -50°C ., have recently been developed and are now available for over-the-counter consumer use.

[0004] These more recent cryosurgery devices typically employ an aerosol container, whose liquid refrigerant is directed through a conduit to a porous tip. The tip is then applied to the skin lesion for a prescribed period of time. However, the manner in which the refrigerant is transferred from the aerosol container to the tip may not sufficiently limit the loss of the refrigerant during such transfer and may not sufficiently prevent accidental release of the refrigerant.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. 1 is an exploded view of an example container for a cryosurgery device, according to an example embodiment of the present invention.

[0006] FIG. 2 is a perspective view of an example base of the example container shown in FIG. 1, according to an example embodiment of the present invention.

[0007] FIG. 3 is a top view of the example base of FIG. 2, according to an example embodiment of the present invention.

[0008] FIG. 4 is a bottom view of the example base of FIG. 2, according to an example embodiment of the present invention.

[0009] FIG. 5 is a representation of section B-B of the example base of FIG. 3, viewed in the direction of the arrows.

[0010] FIG. 6 is a perspective view of an example cover of the container of FIG. 1, according to an example embodiment of the present invention.

[0011] FIG. 7 is a perspective view of an example door for a depression in the base of FIG. 2, according to an example embodiment of the present invention.

[0012] FIG. 8 is a perspective view of an example cryogen bottle according to an example embodiment of the present invention.

[0013] FIG. 9 is an enlarged perspective view of an example hub situated at the top of the cryogen bottle of FIG. 8, according to an example embodiment of the present invention.

[0014] FIG. 10 is an enlarged perspective view of an example valve actuation assembly of the container of FIG. 1, according to an example embodiment of the present invention.

[0015] FIG. 11 is a perspective view of an example applicator tip that may be stored in the container of FIG. 1, according to an example embodiment of the present invention.

[0016] FIG. 12 is a perspective view of the example applicator tip of FIG. 11 attached to the cryogen bottle of FIG. 8, according to an example embodiment of the present invention.

[0017] FIG. 13 is a front view of an alternative embodiment of an applicator tip according to the present invention.

[0018] FIG. 14 is a perspective view of an example cryosurgery kit according to an example embodiment of the present invention.

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS

[0019] The inventors of the present application have recognized that there is a need for a cryosurgery device container that efficiently stores parts belonging to a cryosurgery device and also provides for safe and efficient use of the device.

[0020] One example embodiment of the present invention is a cryosurgery device container which includes a base having compartments for storing all of the parts of a cryosurgery device, such as a cryogen bottle and applicator tips, as well as operating instructions. In addition, a cryogen bottle valve actuator and reservoir are integrated into the base. The container also includes a transparent door for the applicator tips and a transparent cover that fits on the base. The container has several advantages. First of all, a cryogen bottle valve actuator and reservoir integrated into a stable base allow the bottle to be actuated in a simple manner—with one hand, if need be—and allow refrigerant from the cryogen bottle to be stored safely and conveniently during use, without leakage or spillage. In addition, the transparent lid allows all of the device parts to be held in place and enables one to see all the device parts with the lid on the base. Furthermore, the compartment for the cryogen bottle is oriented in the base in such a manner, that the cryogen bottle is tilted back slightly and any logo or other information on the bottle is more visible to a customer in a store.

[0021] Another example embodiment of the present invention is a cryosurgery kit which may include the above-mentioned container, e.g., the base and transparent cover, and also the above-mentioned items belonging to or associated with a cryosurgery device, e.g., a cryogen bottle, integrated valve actuator/reservoir, applicator tips, and operating instructions.

[0022] Another example embodiment of the present invention is a container for a cryosurgery device which includes a cryogen bottle. The example container has a container body including an internal space sufficiently large to hold the cryogen bottle; a valve actuation assembly mechanically coupled to the container body, the valve actuation assembly configured to actuate a valve on the cryogen bottle; and a reservoir positioned relative to the valve actuation assembly so that the reservoir receives refrigerant from the cryogen bottle when the valve on the cryogen bottle is actuated using the valve actuation assembly.

[0023] Some other example embodiments include a cryosurgery kit having a cryogen bottle; a container holding the cryogen bottle; and a valve actuation assembly mechanically